



Quality Assurance challenges employees to improve; Metrics reveal performance and build confidence; QA learns from space-shuttle accident; Inventory process improvement will save up to \$2 million

Operations and Manufacturing

QA LEADS EFFORT TO EXCISE ERRORS

What does quality mean to you? Y-12's reputation for quality is based on delivering products and services on time, on budget and in compliance with all requirements.

The Quality Assurance Division is leading a site-wide effort to significantly reduce errors, deviations and waivers.

Attaining quality is everyone's responsibility, and Y-12 employees are committed to providing the best possible product every day.

NNSA analyzes many Y-12 metrics, including the cost of quality. Costs for rework, deviations and scrap are noted and compared with those of potential suppliers.

QA manager Larry Cumberland says that "each Y-12 employee is constantly challenged to evaluate his or her own cost of quality as part of our efforts to continuously improve quality, cost and schedule performance."

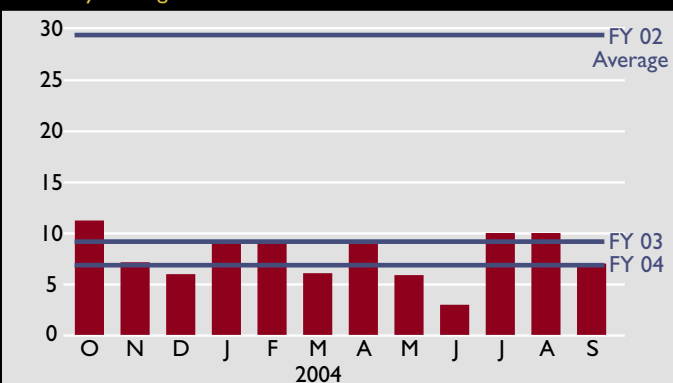
Quality Performance Builds Confidence

Y-12 uses metrics to baseline and track performance and establish realistic but challenging goals that are essential for maintaining customer confidence and operational excellence.

QA has defined more than 70 metrics across its seven departments to provide feedback on monthly performance, support required changes and define resource needs. These metrics are reviewed

Performance on Overdue Issues

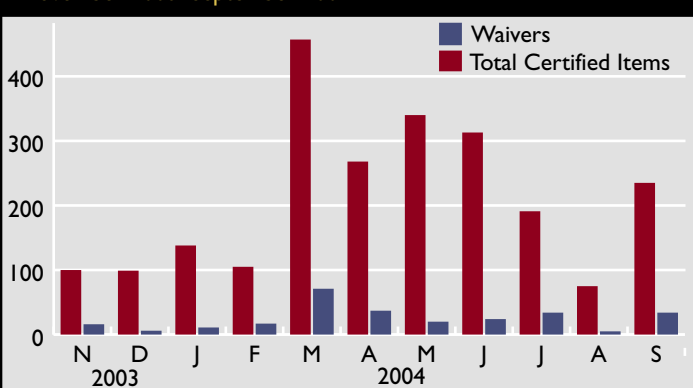
Monthly Average <10



Y-12 has significantly reduced the number of unresolved or overdue issues in the Corrective Action Planning System—but we can do better.

Total Certified Items with Waivers

November 2003–September 2004



The number of products with waivers continues to be a small percentage of Y-12's total output—but our goal is zero.

monthly. Data cover safety, security, operations, administrative performance, project and program schedule and cost performance.

Metrics are used to track goal accomplishment and generate changes in action plans where needed. They are a key to success at every organizational level and are vital to managing change and ensuring effective performance, which has improved in product quality, software quality, administrative performance and work efficiencies.

Cumberland says, "Quality cannot be compromised. We should not measure success by the number of deviations reduced over time, but should measure failure by a product deviation greater than zero."

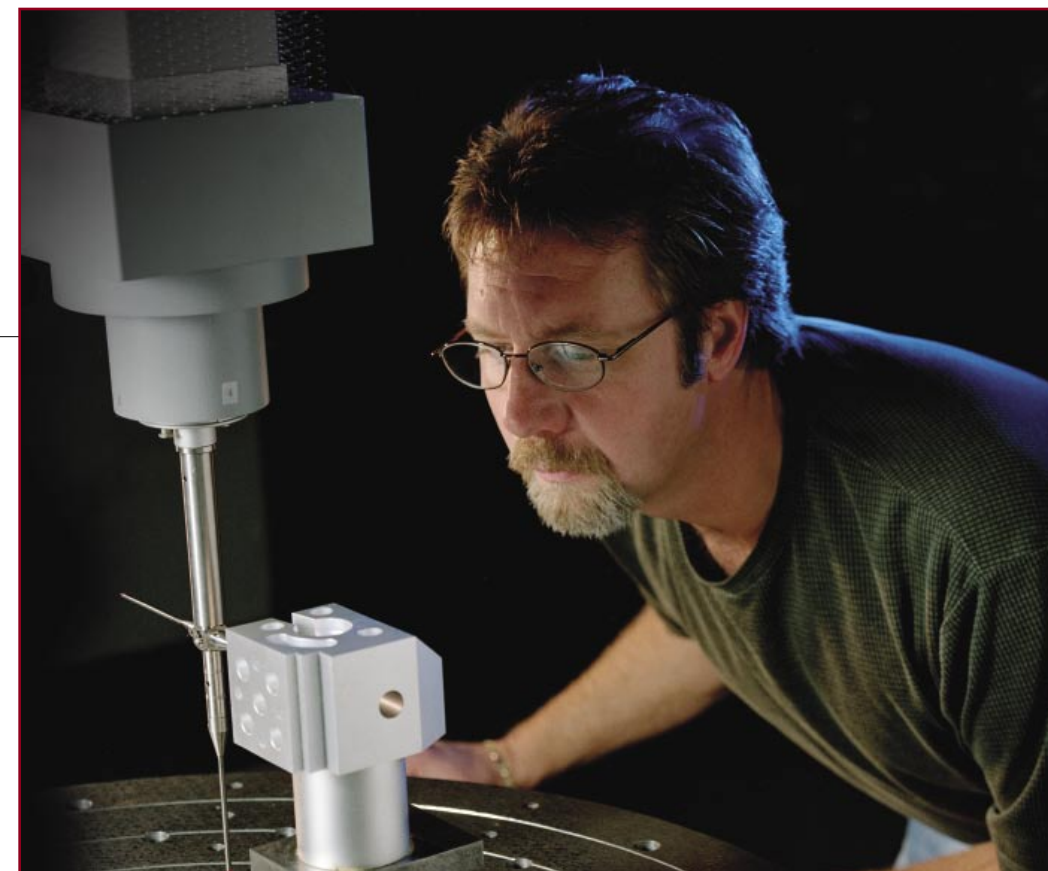
Columbia Accident Lesson—Zero Deviations

Y-12 can always learn from others. Incidents like the Columbia space shuttle disaster challenge Y-12 to be more conscious of safety, security and quality.

Lessons learned from investigation of these incidents apply to everyone working in national defense.

Y-12 makes nuclear weapon components. Complacency, overconfidence and ready acceptance of deviation from requirements, which reportedly contributed to the Columbia accident, are unacceptable here.

"Everyday acceptance of product deviations is demoralizing to any company's staff, damaging to their reputation



Tim Comer of Product Certification examines a workpiece on an advanced coordinate measuring machine. QA is receiving new inspection and gauging technologies to help ensure Y-12 products meet customer requirements.

"We are looking at ways to do continuous inventories with minimal impact on production schedules," says Brian Gullett, another Black Belt. "The ultimate goal is zero downtime, if possible."

FACES OF Y-12

Damien Bowers
Assessor

Y-12's next generation will be assertive, resourceful and flexible, with an enthusiastic willingness to try a different approach when faced with a challenge. The skills its members bring will complement the knowledge and experience of Y-12's current staff.



and disrespectful to their customers," says Cumberland. The lessons learned "apply not only to product quality but also to the Y-12 workforce. Achieving acceptable quality means zero deviations or defects."

Although Y-12's NWC partners have accepted some waivers for product deviations in the past, such deviations did not affect the design agencies' intent for form, fit and function.

Y-12 is driving quality requirements toward an accuracy that will enable product delivery with zero defects, even for nonrepetitive work. Improvement efforts include eliminating defects on manufactured parts and establishing a more closely regulated, auto-

mated work control system for infrequent manufacturing activities. These projects are helping build a zero-defect manufacturing culture.

INVENTORY REMAKE SAVES \$2.1 MILLION

Y-12 will avoid \$2.1 million annually in estimated costs following the intense inventory efficiency improvement effort by a team representing Productivity and Process Improvement, Nuclear Materials Control and Accountability, Manufacturing, Applied Technologies and Engineering.

The team shortened by approximately 46% the production downtime in four production areas caused by

inventorying nuclear materials.

"Shortened downtime not only increases production time but also decreases risk to Y-12's production milestones," says Debbie Hunter, a PPI Black Belt process specialist.

"The team made several recommendations to improve the inventorying process in the targeted areas," says Debbie Sumner, another PPI Black Belt and activities coordinator for all four areas.

Long-term strategies promise even greater impact.

The team's short-term recommendations will be replicated in similar production areas. Technological solutions to control inventory through real-time monitoring are also being sought.